



Peetz, Colorado Wind Project

A Primer on Project Development



- enXco, inc.
- Colorado Wind and Distributed Energy Conference
- April 8, 2002

Goal

- Promote Wind Energy through the understanding of the development process, considerations and constraints.



Outline

- Who is enXco?
- Role of developer.
- Requirements for development.
- Description of Peetz project.
- Identification of Peetz stakeholders.
- Benefits to stakeholders.
- Highlights of transactions with stakeholders.
- Summary and suggestions.



Who is enXco?

- **Founded in 1987.**
- **U.S. corporation, owned by Danish holding company whose investors are worth in excess of US\$60 billion.**
- **Largest independent provider of asset management services in the world, 4,000 turbines of various vendors, for third parties and enXco's projects. Maintain 98.0% availability.**
- **Owns 200 MW of projects.**
- **Development services for over 300 MW, including US Navy and Air Force.**
- **Offices in U.S., U.K., Denmark, Germany, India.**



Recent enXco Activities in the Americas

Project Name, Location	enXco Role	Capacity
Southwest Mesa, Texas	Dev, EPC, O&M	75 MW
Cerro Gordo, Iowa	Co-Dev, EPC,O&M	42 MW
Tierras Morenas, Costa Rica	EPC	20 MW
Cameron Ridge, CA	EPC	48 MW
Alta Mesa III, California	WTG Erection	10 MW
Chandler, Minnesota	Dev, EPC, O&M	6 MW
TVA, Tennessee	EPC, O&M	2 MW
SMUD, California	EPC, O&M	1 MW
Peetz, Colorado	Dev, EPC, O&M	30 MW
NSP IV, Minnesota	Dev, EPC, O&M under development	80 MW
	Total	314 MW



Role of the Developer

- **Site Selection**
 - ◆ Wind, environmental, soils studies
- **Land Rights Acquisition**
- **Permitting**
- **Negotiation of Power Purchase, Interconnection and Transmission Service Agreements**
 - ◆ Interconnection and System Studies
- **Micrositing**
- **Engineering, Procurement and Construction**
- **Arranging operations and maintenance contractor**
- **Financing**
 - ◆ Production Tax, Emission and Renewable Credits



Requirements for Wind Power Development

- As a commercially viable technology, must meet targeted equity returns and lender requirements.
- Convergence of wind resource, transmission capacity and market.
 - ◆ On the grid versus distributed generation.
 - ◆ Electricity prices must be low enough to win requests for proposals (RFPs) and meet expectations of rate payers.
- Cooperation from stakeholders.



Wind Speed to Power Relationship

$$P = 0.5 \rho V^3 A$$

Where:

P = Power in Watts

ρ = Air density in kg/m^3

V = Velocity in m/s

A = Swept area in m^2



Description of Peetz Project

- Location – Peetz, Colorado in Logan County
- Capacity – 30 MW
- Annual Production – 70 GWh sold to PSCo
- Wind Turbines – 33 NEG Micon 900 kW
 - ◆ Rotor diameter: 52 M (171 ft)
 - ◆ Hub height: 72 M (236 ft)
 - ◆ Tip height: 98 M (322 ft)
- Land Coverage – Portions of 5 Sections
- Site Substation – 34.5 kV / 115.0 kV
- Transmission Line – Approx. 2 miles
- PSCo Substation – Peetz (WAPA controlled)







Why is enXco in Colorado?

- *Renewable Energy in Colorado's Future, Recommendations of the Governor's Renewable Energy Task Force, November 1997*
- **PSCo's Windsource Program**
- **PSCo's Request for Proposal**
 - ◆ enXco's qualifications
 - ◆ Price and terms
 - ◆ High likelihood of meeting PSCo's goals.



Why is enXco in Peetz?

- **Access to interconnect and transmission line.**
- **Ability to serve Denver market.**
- **Wind Resource**
- **Support of Stakeholders**
 - ◆ **Landowners**
 - ◆ **Logan County Government**



Benefits to Stakeholders

- **General Population and Ratepayers**
 - ◆ **Clean, renewable energy**
 - ◆ **Environmental benefits far outweigh impacts.**
 - ◆ **Low water usage**
 - ◆ **Domestic Resource**
 - ◆ **Economic bus bar prices**



Benefits to Stakeholders

- **State and County Governments**
 - ◆ Income tax, personal property tax, sales and use tax proceeds
 - ◆ May be able to reduce real property taxes
 - ◆ Fees
- **Local Governments and Municipalities**
 - ◆ Tourist dollars
 - ◆ Landowner and construction spending
 - ◆ Construction and O&M job creation.



Benefits to Stakeholders

■ Landowners

- ◆ Very little land used by wind farm (approx. 5.0% - 10.0% of ground cover.)
- ◆ Continue to farm, graze, or place land in Conservation Reserve Program
- ◆ Reliable royalty payments, only tax payments have higher priority.
- ◆ A new cash crop. Royalty payments based on project economics. Higher returns than can be achieved through agricultural pursuits without being subject to the risk and uncertainty of agriculture.



Benefits to Stakeholders

- **Sovereign Native American Nations**
 - ◆ Same benefits as landowners
 - ◆ Can collect fees akin to property taxes
 - ◆ Construction and O & M job creation



Benefits to Stakeholders

- **Utilities (IOUs, MUNIs, COOPs)**
 - ◆ **Reliable power – Use wind as a foundation.**
 - ◆ **Fuel hedge**
 - ◆ **May relieve transmission constraints**
 - ◆ **Economic bus bar prices**
 - ◆ **Benefits from renewable energy and emission credits**
 - ◆ **Rapid construction time**
 - ◆ **Public relations.**

Peetz Stakeholders

- Ridge Crest Wind Partners, LLC (Project Company)
- enXco, inc. (Developer and Operator)
- Cinergy Global Power (Owner)
- Public Service Company of Colorado (PSCo)
- Western Area Power Administration (WAPA)
- Federal Energy Regulatory Commission (Transmission Regulator)
- Colorado Public Utilities Commission (CPUC)
- Logan County Officials
- Landowners
- PSCo *Windsource* Customers



Public Service Company of Colorado (PSCo)

- PSCo awarded enXco mandate to build project pursuant to an RFP.
- Electricity sold to PSCo pursuant to a fifteen-year power purchase agreement.
- Interconnection and transmission service agreement with PSCo.
- PSCo agreements with WAPA.
- RFP and PPA approved by CPUC.



Logan County

- **Conditional Use Permit.**
 - ◆ Issued for five years
- **Building Permits and Inspections.**
- **Sales and Use Tax.**
- **Personal Property Tax.**
 - ◆ Assessment of Property Value?



Landowners

- **Options and Easements**
 - ◆ **Two-tiered pricing based on turbine capacity.**
- **Number and Location of turbines.**
- **Restrictions on Planting and Structures.**
- **Complexity of Agreements.**
- **Payments.**





Summary and Action Utilities/WAPA

- **Properly assess benefits and costs of wind in your system.**
- **Stress benefits of wind energy to ratepayers.**
- **Work to alleviate transmission constraints.**

Reliable & Cost Effective

- At times lowest bus bar price.
- Reliability versus Dispatchability
- 95.0% per year and almost 100.0% Availability when the wind is blowing
- Wind Energy Forecasting
 - ◆ TrueWind Solutions
- Predictability of Load versus Supply





Summary and Action Logan County

- **For all economic development projects issue conditional use permit for life of the project.**
- **Work with the State on personal property tax relief and project assessment.**



Summary and Action State of Colorado

- **Revisit** *Renewable Energy in Colorado's Future, Recommendations of the Governor's Renewable Energy Task Force, November 1997.*
- **Work with counties on personal property tax relief and project assessment.**
- **Isolate landowners from real property tax increases.**



E X E C U T I V E S U M M A R Y



*Renewable
Energy in
Colorado's Future*

Recommendations of the
Governor's Renewable Energy Task Force
November 1997





Renewable Energy in Colorado's Future, pg. 11

- “Reduce property taxes for renewable energy facilities. A renewable energy facility costs about twice as much to build as a comparable fossil fuel plant. While the renewable plant can operate less expensively because its ‘fuel’ is free, its high capital cost means that it will pay higher property taxes—about twice as much per unit of energy. To reduce this unintended penalty, the task force recommends cutting property taxes for renewable energy plants by approximately 50 percent.”

